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# The Maryland Fruit Grower

October, 1933

Maryland State
Horticultural Society

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Published Monthly By

The Maryland State Horticultural Society

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Vol. 3 October, 1933 No. 10

## THE NEXT TEN YEARS IN THE FRUIT INDUSTRY*

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(Continued from last month)

**Central States**—The quantity of apples produced in the Central States is not generally appreciated by most people. In late years these states have produced about 25 per cent of all apples grown in the United States. Many parts of the region are not suited to the economical production of apples. This is indicated by low yields which have averaged about 1.2 bushels per bearing tree in late years as compared with .8 of a bushel 20 years ago. A part of the region is subject to severe damage from frosts, disease, and insects. For decades farmers in some sections of the Central apple region have been setting out apple trees and then neglecting and removing them as they fail to produce well or as strong competition is encountered from other growing regions.

From 1910 to 1930 the number of trees decreased 60 per cent and production decreased 42 per cent. However, considerable planting took place during the last 15 years and many of the orchards now remaining are well supplied with young trees. According to census figures nearly one-third of the trees in these states had not reached bearing age in 1930. Many of the tree removals in the Central States were of odd and unpopular varieties. The more recent plantings have been of the more popular varieties such as the Delicious, Winesap, Jonathan, and Stayman Winesap.

It is believed that the newer orchards of the region are more favorably located than many of the early plantings, and that the past rate of tree mortality may be reduced unless, of course, the present depression continues long enough to cause considerable neglect and abandonment. Thus far the depression has had some effects in the region as elsewhere. Reports from some parts of the region indicate that commercial orchards were fairly well cared for in 1932 but that non-commercial orchards received little care.

In the region as a whole the removal of old trees continues. Few trees are being set. The drought of 1930 in a part of the region resulted in small incomes, and money is scarce for caring for the orchards. While many growers are very much discouraged, others apparently feel the necessity at this time of more skillful orcharding and are seriously considering the weeding out of the unprofitable trees, particularly those of poor varieties, and the concentration of their efforts on the more promising parts of their orchards.

*(From Proceedings of Pennsylvania State Horticultural Association, January, 1933)

**Eastern States**— In the Eastern States, which include the New England, Middle and South Atlantic States, the number of apple trees declined about 24 per cent from 1910 to 1930. Trees of bearing age and production both decreased about 17 per cent. Shortly after the World War there was considerable planting of some of the more popular varieties in the Eastern States. A decided effort was made in some sections to improve orchard practices and management. The result is that the commercial orchards in the region today are, on the whole, perhaps better suited for the economical production of fruit than was the case 10 or 20 years ago.

These Eastern States had in 1930 about 44 per cent of all apple trees in the United States and produced about 42 per cent of all the apples. The tree survey of 1928 showed that approximately 70 per cent of the apple trees in commercial orchards in the Eastern States were under 19 years of age, and the census figures of 1930 indicated that 20 per cent of the trees were yet to come into bearing. The proportion of trees in the region that are yet to come into bearing does not seem unusually large. In the region as a whole recent plantings have been light and removals have continued at a normal rate but there are indications that many of the orchards that are not generally profitable will be badly neglected. Reports from New York State, which is second only to Washington in quantity of apples produced, indicate that many growers in the western part of the state are badly discouraged because returns have not been very good during the last 10 years. Neglect of many orchards is to be expected if the depression continues. In the Hudson and Champlain Valleys the growers are reasonably optimistic. The orchards are in good condition and no general neglect is apparent at this time. One reason for this is nearness to markets; another is that the plantings in these valleys are of the newer varieties. In New England tree removals continue. These are, for the most part, from farm orchards. In the better commercial sections considerable improvement has been made in orchard practices. In the Cumberland-Shenandoah States of Pennsylvania, Virginia, West Virginia, and Maryland, nearly one-fourth of the trees in commercial orchards were less than 9 years of age in 1928. Roughly the rate of planting for sometime prior to 1928 would maintain the number of trees if the average life of trees is about 30 years. This is a reasonable expectation if the trees are well cared for; but probably too high if the depression continues for many years.

**Varieties Planted**—In the apple tree survey in 41 states made by the Bureau of Agricultural Economics for 1928, some 800 standard varieties were classified separately. Of these varieties, ten made up 60 per cent of the total trees. These 10 varieties were as follows: Delicious, 8.5 per cent of all trees; Winesap, 8.2 per cent; Jonathan, 8 per cent; Baldwin, 6.8 per cent; Stayman Winesap, 6.3 per cent; Ben Davis, 5.6 per cent; Rome Beauty, 5.2 per cent; York Imperial, 4.4 per cent; McIntosh, 4 per cent; and Grimes Golden, 3 per cent.

With reasonable care production of Stayman Winesap would increase during the next several years. York Imperial is confined largely to the Cumberland-Shenandoah States, although it is found in limited quantities in some of the Central States. Recent plantings of this variety have been light. In 1928, only 11.4 per cent of the York Imperial trees were under 9 years old whereas over 50 per cent were more than 18 years of age. It would not be surprising if production of this variety was to decrease during the next

several years.

The Baldwin is especially prominent in New York and in the New England States and is found to some extent in Michigan and Ohio. Recent plantings of Baldwin have not been heavy. In 1928, only 12.7 per cent of the Baldwin trees were under 9 years old and 60 per cent were over 18 years of age. It seems probably that production of this variety will decline during the next several years.

The Delicious has been widely and extensively planted. It is prominent on the Pacific Coast where a very large part of the present plantings are devoted to this variety, in the Central States, in the Cumberland-Shenandoah states, in New Jersey and Delaware, in New England and in New York. About 56 per cent of the Delicious trees in the 41 states were less than 9 years old in 1928, and 96 per cent were under 19 years of age. Barring unusual circumstances, production of the Delicious apple is expected to increase considerably during the next several years.

Rome Beauty is prominent in the orchards of Ohio, Virginia, West Virginia, and the Northwestern States as well as in Pennsylvania; also to a lesser extent in some other Eastern and Central States. In 1928, 23 per cent of the Rome Beauty trees in commercial orchards were under 9 years old and 74 per cent were under 19 years of age. The proportion of young Rome Beauty trees seems sufficient to at least maintain production of this variety under normal conditions of care.

Jonathan is also especially important in the Western and Central States. In 1928 about 30 per cent of the Jonathan trees were under 9 years old and 75 per cent were under 19 years of age. With reasonable care the production of this variety may be maintained and possibly increased.

Plantings of McIntosh have been largely confined to New York, New England, and Michigan. The McIntosh is fairly new and in 1928 about 46 per cent of the McIntosh trees were under 9 years old and 87 per cent were less than 19 years old. Barring unusual conditions production of this variety may be expected to increase.

The Winesap is of considerable importance in many apple growing regions. In 1928, about 26 per cent of the Winesap trees were under 9 years old and about 75 per cent were under 19 years of age. Unless these trees are severely neglected, no material decrease in production is expected during the next few years.

Production of apples of the more popular varieties will undoubtedly go far toward offsetting decreases in production from the hundreds of odd and less popular varieties. For years the Ben Davis has been declining in popularity. In 1928 less than 7 per cent of the Ben Davis trees were under 9 years of age and nearly 80 per cent were more than 18 years old. The Yellow Newtown, which has limited demand, has not been planted to any extent in recent years. Only 5 per cent of these trees were under 9 years old and nearly 60 per cent were more than 18 years of age in 1928. The Rhode Island Greening and Northern Spy have been moderately planted in late years. In 1928 from 20 to 22 per cent of the trees of each of these varieties were under 9 years of age. Many of the less generally known varieties of apples have been planted only in a very limited way during recent years. The general tendency of commercial growers is to reduce the number of varieties and to confine their plantings to the more popular varieties.

**Foreign Competition and Demand**—In the 5 seasons (1926-27 to 1930-31) apple exports from the United States have averaged one-sixth of the total commercial crop. About one-seventh of the commercial barreled apple crop and one-fifth of the commercial boxed crop were exported during this period. Exports, as far as quantity is concerned, during the first 5 months of the 1932-33 season have been about normal for the size of the crop. Prospects for the second half of the 1932-33 season appear more encouraging than they were during the first 6 months. European home grown supplies are practically exhausted. Demand conditions, however, are still at a low level so that prices anything like those indicated by the very short apple supplies of this year seem very unlikely.

As to the long-time situation, World apple production appears to be on a slightly upturn trend. This has resulted in a slight increase in the quantity of apples entering into world trade. Fortunately, there has been an increase in the demand for fruit which has tended to offset the increased world supplies. On the other hand, the policy of protecting home industries has made rapid strides in recent years in many of the chief importing countries. This policy has led to trade restrictive measures designed to protect home industries. The future of the American apple export trade will depend, to a large extent, on the degree to which these protective maesures discourage American exports, and the success achieved in stimulating production in foreign countries.

The restrictions of foreign outlets for American apples by embargo, quota, and sanitary regulations make it absolutely necessary for apple growers and American exporters to make every effort to see that only sound fruit of the better grades is exported.

## Conclusions

In my opinion, the production of tree fruits is about the most fascinating and speculative kind of farming; fascinating because of the opportunity the grower has of becoming a specialist in a line that will, in the long run, pay well for the attention and care he gives his orchard; speculative because of the long-time nature of the business. The apple orchard may be an important source of income for 30, 50 and perhaps 60 years or more. During these many years periods of prosperity and periods of depression are likely to occur. If the orchard has the right varieties, is well located, and is given proper care, it will in the long run be a source of profit and enjoyment. If the orchard is so located that it will produce a crop only when every orchard in the country has a heavy crop; or such that the expense of operation is unreasonably high, losses from the lean years will eat up the profits from the good years, the trees will be neglected, and eventually the orchard will be only a disagreeable memory of the past.

For twenty years economic factors have been forcing an adjustment of the apple industry until at the beginning of the present business depression (1929) the industry was generally better suited for the efficient production of apples than at any time in recent years. On the whole it was composed of a relatively large portion of the better varieties, production was almost as heavy as twenty years earlier when tree numbers were twice as great, and there was every indication that with reasonable care and tree replacements the orchard would continue to produce for many years an abundance of apples for domestic consumption and for export.

The future course of the business depression will influence production. If it continues long many orchards will be neglected and abandoned. This does not hold out much hope for the poor orchard. It may in the end benefit the good producer.

Large numbers of young trees indicate future heavy supplies of oranges, grapefruit, canned peaches, pears, cherries, prunes and plums, and grapes. European exports are uncertain because of world-wide economic conditions. This together with trade restrictions, quotas and embargoes make it all the more necessary to export only good apples.

One thing must be remembered, while all agricultural prices are low, apple prices have held up very well compared with prices of other farm products. It is my opinion that if the depression continues the Eastern apple grower will be as well off, and perhaps better off, than most other kinds of farmers. Certainly they will have a decided advantage over producers located long distances from consuming markets.

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## *THE HARVEST*

The story of the peach harvest in orchards located in Central Maryland from the Susquehanna River to Hancock was a sad one. Practically every grower suffered heavy loss from fruit being blown from the trees. The fruit that dropped, rotted in a day and that left on trees showed rot either on the trees or on the way to market. There was considerable tree breakage in certain sections. The storm hit just before or during harvest of Elberta and Hale.

The apple harvest is showing plenty of small, badly blemished fruit. Scab, aphis, codling moth, Oriental moth, mechanical injury and in some cases poor color are causing the canner and cider bins to bulge to overflowing.

Estimates place the total U. S. commercial crop at 28,371,000 barrels and Maryland crop as 280,000 barrels for 1933. Last year the U. S. crop was 28,645,000 barrels and Maryland had 252,000 barrels. The 1926-1930 average for U. S. was 32,605,000 barrels and for Maryland 448,000 barrels. So far, good fruit is rather scarce in some sections. There was considerable dropping of Grimes, Jonathan, Delicious, and Golden Delicious before picking time.

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## *NURSERY STOCK AND JAPANESE BEETLE MEETINGS*

Growers, nurserymen, florists and shippers have been invited by Dr. E. N. Cory, State Entomologist, to meet at the Southern Hotel, Baltimore, on Thursday morning, October 19 to consider the question of Japanese Beetle situation, also the limitations of importation of foreign nursery stock. The object of this meeting is to get the opinions of Maryland nurserymen, growers, etc., to present before the national hearings on the questions before U. S. officials in Washington, D. C., on October 24 and 25. All interested parties should attend the October 19th meeting in Baltimore.

## *COWPEAS AS A COVER CROP*

The Illinois Experiment Station in a trial of cover crops, reported that under Illinois conditions, a more dependable cover crop was obtained from cowpeas than from sweet clover. In a four-year experiment (through 1931), sweet clover froze out or was badly affected by dry weather in three out of four years. They concluded that the soil conditions should be considered in relation to the kind of cover crop to be used.

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## *FIRE BLIGHT*

According to "American Hortigraphs", September-October, 1933, Dr. H. R. Rosen, plant pathologist at Arkansas Experiment Station investigated fire blight and its method of spread. After a six-year study, Dr. Rosen stated that pear trees play an important part in the spread of the fire blight. He also found that under Arkansas conditions there seems to be little or no blight bacteria exuding from over-wintering cankers, and as the first infection was nearly always on the blossoms, Dr. Rosen concluded that bees might spread the disease. He stated that he found the bacteria on bees in early spring before they had left the hives and before the disease showed up on the blossoms. He also found that the germ of fire blight was to be found in summer and winter in bee hives located in or near infected orchards.

An application of 1-3-50 Bordeaux Mixture applied to open pear blossoms gave almost complete control of blight in 1932 and 1933, in Dr. Rosen's experiments.

There has been considerable argument about bees carrying blight, but even if it is true, there is still no argument that we must have bees for good pollination, although some other insects play a part in pollination.

The August, 1933 "Tennessee Horticulture", the news-letter of the Tennessee Horticultural Society, states that the 1-3-50 Bordeaux spray in full bloom was helpful in control of both blight and scab, due to the season. At least several orchards having this spray had less scab as the spray provided coverage between the pink and calyx (petal-fall) sprays. In applying the Bordeaux spray for blight Tennessee growers made two applications to Transparent and Golden Delicious as these varieties do not open all blossoms at one time.

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## *BULLETINS*

A few of the recent bulletins which might be of interest to fruit growers are listed below:

"Roadside Marketing in Michigan", Special Bulletin 185, Mich. Agr. Exp. Sta., East Lansing, Michigan.

"Roadside Marketing in New Hampshire", Bulletin 249, N. H. Agr. Exp. Sta., Durham, N. H.

"Roadside Markets", U.S.D.A. Leaflet 68, Office of Information, U. S. Dept. of Agriculture, Washington, D. C.

"Roadside Marketing of Agricultural Products by Ohio Farmers". Bul-

letin 521. Ohio Agr. Exp. Sta., Wooster, Ohio, 1933.

Factors Causing Cull Apples in Missouri—Bulletin 319, Missouri Agr. Exp. Sta., Columbia, Mo., 1932.

Peach Harvesting Studies—Bulletin 241, (technical) Utah Agr. Exp. Sta., Logan, Utah, 1933.

Experiments with Commercial Nitrogenous Fertilizers on Apple Orchards—Bulletin 623, N. Y. State Agr. Exp. Sta., Geneva, N. Y., 1933.

Effect of Height of Pruning on Size of Berries and Yield in the Latham Raspberry—Bulletin 281, Minnesota Agr. Exp. Sta., St. Paul, Minn., 1931.

The Construction and Management of Air-Cooled Storages with Special Reference to Apples—Circular Bulletin 143. Michigan Agr. Exp. Sta., East Lansing, Mich., 1932.

Growing and Marketing Muskmelon—Circular 405. Illinois Agr. Exp. Sta., Urbana, Ills., 1933.

Raspberry Growing in New York State: Cultural Practices and Disease Control—N. Y. Agr. Exp. Sta., Geneva, N. Y., 1933.

Sweet Clover as a Soil Improvement Crop for Orchards—Circular 269. N. J. Agr. Exp. Sta., New Brunswick, N. J., 1933.

## *MARYLAND EXPERIMENTS*

A short summary of some experiments, results and future plans, submitted by the Department of Horticulture of the University of Maryland Experiment Station has been given, as follows:

"Biennial bearing of the York Imperial variety of apples is one of the most important practical problems with which the orchardist in the Cumberland-Shenandoah Valley must contend. Many years of investigation have shown that the biennial bearing tendency may not be controlled by special fertilization, by special pruning practices or by cultural treatments, as reported for other varieties and in other sections. Recent investigations indicate that early, heavy thinning may be important. Observations on the effect of killing of part of the blossoms by frost support these results. This suggests that thinning, possibly combined with special pruning and fertilization may be the solution to the problem. Drought and frost will doubtless continue to be factors of major importance in disturbing the fruiting behavior of the trees.

The development of a bright red color on apples is of great economic importance to eastern growers. Investigations have been in progress for a number of years to find ways and means by which the grower might economically influence apple color. Of the factors investigated, an adequate healthy leaf area per fruit, optimum soil moisture, and sufficient intensity of light are of major importance. Thinning of fruits, pruning and soil organic matter, but especially thinning, assume greatest importance. Applications of sugar to the soil may affect the development of color but this practice as well as that of injecting or fertilizing trees with chemicals of different sorts does not appear promising. Moderate cropping of thrifter trees, adequately supplied with moisture, will generally yield highly colored fruit.

Nitrogen fertilizer applications have given best results in growth and yield when scattered over the area under the spread of the branches. Trees

in sod with mulch placed under the trees grow and fruit well if sufficient nitrogen fertilizers are applied. Trees in sod have a high concentration of fibrous roots in the upper six inches of soil, whereas trees in cultivation have the fibrous roots at a greater depth. Greatest economy in applying soluble fertilizers is obtained when these are applied in the regions where there is the greatest number of roots.

Thinning of blossom clusters of grapes just before the blossoms open results in larger bunches. The degree and type of thinning to get profitable results is under investigation. Early development of leaf area per shoot is important in setting of grape fruits as well as development of size of berries. It is likely that with a greater demand for quality in grapes, thinning for size and quality of bunch may become an important practice.

The results of many years of pollination work which have already been of great practical value to the growers in this and other states are being summarized. The report will provide a ready reference and in addition to giving the pollination results will have these grouped according to blooming dates so that the grower or investigator will have this additional information. Work on the newer varieties which are coming into commercial use is being carried on as rapidly as possible.

The important consideration of planting distance of peaches in relation to profitableness, total yield, size and quality of crop is being investigated. The results of this experiment should answer some of these very important questions and form a basis for a more logical management program for the peach orchard. Already it is apparent that too close planting is affecting size and grade and the expense of removing trees may not justify the larger early yields obtained.

Nursery stock investigations in addition to giving consideration to profitable fertilization and propagation, and dealing with the important problem of securing, by breeding and selection, stocks which will be resistant to woolly aphis, root rot and other diseases. Root troubles are the direct cause of many spotted, irregular and unprofitable orchards. They cause waste of fertilizers, spray materials, time, energy, and money for the grower. Progress in controlling diseases of fruit tree stocks is being made and in the course of a few years it is hoped to introduce stocks which will not only be resistant to many root troubles but which will produce more uniform and better yielding trees as well. Uniformity and longevity are important from the standpoint of planting distance, annual cropping, and other orchard economies.

Investigations on canning and truck crops are showing considerable promise of contributing much of value to the canner and grower. Soil fertility has a direct influence upon the rate of development of corn. Not only is the vegetative period between seeding and silking shorter on a fertile soil but the period from silking to maturity is also shorter. The chemical composition and canning quality undergoes more rapid changes on such a soil. The canner would need to watch his better fields more closely than those of lower fertility in order to harvest at the proper time.

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"Josh", said the farmer to his son, "I wish you'd eat off by yourself instead of with the summer boarders, if you don't mind".

"Ain't my society good enough for 'em?"

"Your society is all right, but your appetite sets them a terrible example".

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